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Shape of the Cu(2) NQR spectra in YBa2Cu3O7, TmBa2Cu3O7 and TmBa2Cu4O8

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Abstract

We present a study of shape of the Cu(2) NQR spectra in YBa2Cu3O7, TmBa2Cu3O7, and TmBa2Cu4O8 compounds at temperatures of 4.2-300 K. The results of the quantitative analysis lead us to conclude that the shape of the Cu(2) NQR spectra in all the samples studied can be described in the framework of the "motional narrowing" model, which implies that the Cu(2) nucleus possesses two different NQR frequencies between which it can rapidly jump. The difference in frequencies seems to be related to the charge-stripe correlations in CuO2 planes resulting in a dynamical modulation of the electric field gradients at the Cu(2) nuclei. © 1997 American Institute of Physics.

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